



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/603,980	06/25/2003	Wallis Allen Dague	STL11060	3874

7590 05/05/2005
Derek J. Berger, Seagate Technology LLC
Intellectual Property - COL2LGL
389 Disc Drive
Longmont, CO 80503

EXAMINER

CHEN, TIANJIE

ART UNIT PAPER NUMBER

2652

DATE MAILED: 05/05/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/603,980

Applicant(s)

DAGUE ET AL.

Examiner

Tianjie Chen

Art Unit

2652

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 28 January 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-7,9-13 and 15-20 is/are rejected.
- 7) ☒ Claim(s) 8 and 14 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892). | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

2nd Non-Final Rejection

Claim Objections

1. Claims 8, 14, and 15 are objected to because of the following informalities:

Appropriate correction is required.

- In claims 8 and 14, line 5; "second" should be changed to --fourth--; respectively.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 9 and 15 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

- Claims 9 and 15 recite various distances. As to define a distance, there must be a starting point and an ending point. However, in claims 9 and 15, only the starting points are defined, no ending point has been defined. Therefore, the distance is not defined, it renders indefinite.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Art Unit: 2652

3. Claims 1-7, 10-13, 16-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Jabbari et al (US 5,734,528).

With regard to claim 1, Jabbari et al shows an actuator body in Figs. 2A, 3A, and 3B for use in an actuator assembly carrying a transducer over a data storage disc, the actuator body including: an actuator arm section (Fig. 2A) for supporting the transducer; and a fantail section having a first leg 300 and a second leg 302, the first leg having a first feature 312, and the second leg having a second feature 312, wherein the first and second features are configured to engage an over-mold (Fig. 2C; column 6, line 23 to column 7, line 24) when the overmold is over-molded over the fantail section, and the first and second features are located to prevent the over-mold from separating from the fantail section as a result of the over-mold and the actuator body each having a different coefficient of thermal expansion (Column 8, lines 14-18).

Claims 3 and 6, Jabbari et al further shows that the first thermal restraint feature includes a first hole 312, which can have circular shape (Column 8, lines 10-18) and that is in the first leg and extends through the first leg the second thermal restraint feature includes a second hole, which can have circular shape, and that is in the second leg and extends through the second leg (Fig. 3B; column 7, line 67), and wherein the first hole and the second hole are arranged to engage the over-mold such that the over-mold extends through both the first hole and the second hole.

With regard to claims 1, 3, and 6; Jabbari et al does not specify that the first and second features are thermal restraint features.

However, it would have been obvious at the time the invention was made to one of ordinary skill in the art to recognize that the first and second features are thermal restraint. The rationale is as follows: Jabbari et al shows an actuator has all the

Art Unit: 2652

features recited in Applicant's claims 1 and 3. Applicant does not disclose any extra limitations, which make the features being thermal restraint. It means only the structure disclosed in Applicant's claim 1 and 3 would be enough for making the first and second features being thermal restraint. Jabbari et al's device has all the features recited in claims 1 and 3, which should also be enough for making the first and second features thermal restraint.

Claim 10, the above constructed device includes: a voice coil 114; an actuator having a fantail section including a first leg and a second leg forming a yoke for receiving the voice coil therebetween, wherein the first leg has a first thermal restraint feature and the second leg has a second thermal restraint feature and an over-mold on the fantail section that surrounds the first and second legs and holds the voice coil, wherein the first and second thermal restraint features are located such that the over-mold engages with the first and second thermal restraint features to prevent the over-mold from separating from the actuator as a result of the over-mold and the actuator each having a different coefficient of thermal expansion.

Claim 2/1 and 11/10 Jabbari et al further shows in Fig. 2D that the first leg includes a first feature 208 and third feature 212, and the second leg includes a second feature 208 and a fourth thermal restraint feature 212, and the third and fourth thermal restraint features are located to prevent the over-mold from separating from the fantail section as a result of the over- mold and the actuator body each having a different coefficient of thermal expansion. Four features are thermal restraint for the same reason as described above.

Claim 12, in the above constructed device, the first thermal restraint feature includes a first hole that is in the first leg and extends through the first leg the second

Art Unit: 2652

thermal restraint feature includes a second hole that is in the second leg and extends through the second leg and the over-mold extends through both of the first hole and the second hole.

Claim 4/1 and 13/10, Jabbari et al further shows that the first feature includes a first pin 310 (Fig. 3B, column 8, lines 7-8), and the second feature includes a second pin 310; and the first and second features are thermal restraint for the same reason as described above.

Claim 5/1, Jabbari et al shows in Fig.2B that the first feature includes a first wall 208, and the second feature includes a second wall 208. And they are thermal restraint for the same reason as described above.

Claim 7, Jabbari et al shows in Fig. 4, that the first thermal restraint feature 446 is positioned approximately equidistant distal and proximal ends of the first leg, and the second thermal restraint 446 feature is positioned approximately- equidistant distal and proximal ends of the second leg.

on the second leg from each other are all approximately the same.

Claim 16, the above constructed device is an actuator body for use in an actuator assembly carrying a transducer over a data storage disk, the actuator body including: an actuator arm section for supporting the transducer; and a means for reducing thermal stress that is configured to engage an over-mold, wherein the reducing means is configured to reduce thermal stress caused by the over-mold and the actuator each having a coefficient of thermal expansion.

Claim 17, in the above constructed device, the reducing means includes a plurality of holes in the actuator body wherein each of the plurality of holes are located such that the over-mold engages with the plurality of holes to prevent the over-

Art Unit: 2652

mold from separating from the actuator as a result of the over-mold and the actuator each inherits a different coefficient of thermal expansion, and each of the plurality of holes extended through the actuator.

Claim 18, in the above constructed device, each of the plurality of holes has a circular shape.

Claim 19, in the above constructed device, the actuator body further includes a fantail section, the fantail section includes a first and second leg a first of the plurality of holes is positioned on the first leg and a second of the plurality of holes is positioned on the second leg.

Claim 20, in the above constructed device, the reducing means includes a plurality of pins in the actuator, wherein each of the plurality of pins are located such that the over-mold engages with the plurality of pins to prevent the over-mold from separating from the actuator as a result of the over-mold and the actuator each having a different coefficient of thermal expansion.

Allowable Subject Matter

4. Claims 8 and 14 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter:

- As the closest reference, Jabbari et al (US 5,734,528) discloses a actuator body having: a first thermal restraint feature includes a first hole that is in a first leg and extends through the first leg, a second thermal restraint feature includes a second hole that is in a second leg that extends through the second leg, a third

thermal restraint feature, that is in the first leg and extends through the first leg, a fourth thermal restraint feature, that is in the second leg and extends through the second leg, and the over-mold extends through the first and second holes; **but fails to show that** the third thermal restraint feature includes a third hole and a fourth thermal restraint feature includes a fourth hole, and the over-mold extends through the third and fourth holes.

- Applicant asserts: in this invention, the thermal restraint features are one or more spaced holes along each leg of the fantail section of the actuator that extend through the fantail section of the actuator. Over-mold material fills these holes and effectively minimizes coil popping from occurring thus minimizing off-track writes due to coil popping phenomenon (Specification, p. 2, lines 17-21).

Response to Arguments

5. Applicant's arguments with respect to claim 1 and 10 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

6. The prior art made of record IN to-892 Form and not relied upon is considered pertinent to applicant's disclosure.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tianjie Chen whose telephone number is 571-272-7570. The examiner can normally be reached on 8:00-4:30, Mon-Fri.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hoa Nguyen can be reached on 571-272-7579. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Art Unit: 2652

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


TIANJIE CHEN
PRIMARY EXAMINER